Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal

Section 1. General administrative information

Fifteenmile Creek Habitat Restoration Project

Bonneville project number, if an ongoing project 9304000

Business name of agency, institution or organization requesting funding
Oregon Department of Fish and Wildlife

Business acronym (if appropriate) ODFW

Proposal contact person or principal investigator:

Name	Raymond E. Hartlerode
Mailing Address	3450 West 10th Street
City, ST Zip	The Dalles, OR. 97058
Phone	541-296-8026
Fax	541-296-7889
Email address	RayH@gorge.net

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Wasco County Soil & Water Conservation District (SWCD)	2325 River Road, Suite 3	The Dalles, OR. 97058	Ron Graves

NPPC Program Measure Number(s) which this project addresses.
7.1, 7.1D.1, 7.6, 7.6A, 7.6A.2, 7.6B.1, 7.6B.2, 7.6B.3, 7.6B.6, 7.7, 7.8, 7.10, 7.10K and from Sientific review: 2,21, 22, 28, 29.

NMFS Biological Opinion Number(s) which this project addresses.

Although there has not yet a final decision regarding the petition to list Columbia River Steelhead. This project would help address "Biological Opinion" determinations related to habitat and natural production of Winter Steelhead.

Other planning document references.

Fifteenmile Creek Subasin Plan (September 1990)
Lead author Oregon Department of Fish & Wildlife
Co-author Confererated Tribes of the Warm Springs Reservation of Oregon

Fifteenmile Creek Implementation Plan (September 1987)
Oregon Department of Fish & wildlife
USDA Forest Service
Confererated Tribes of the Warm Springs Indian Reservation
Wasco County Soil & Water Conservation District
Bonneville Power Adminstration
Private Landowners

Fifteenmile Creek Watershed Action Plan (July 1997)
Fifteenmile Basin Watershed Council (25 private landowners)
Wasco County Soil & Water Conservation District
Wasco County Court
Oregon Department of Fish & Wildlife
USDA Forest Service
NRCS Natural Resourse Conservation Service
City of Dufur

CRITFC. 1996. WY-KAN-USH-MI-WA-KISH-WIT. The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and the Yakama Tribes. Portland, OR. Cited: volume II, pag

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Subbasin.
Fifteenmile Creek Basin, Eightmile Creek, Ramsey Creek,Dry Creek

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Short description.

Provide for continued Operation and Maintenance of all completed fish habitat treatment measures within the Fifteenmile basin. Provide continued education & demonstration of BMP to landowners throughout the basin..

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	*	Construction	X	Watershed
*	Resident fish	X	O & M	*	Biodiversity/genetics
*	Wildlife		Production	*	Population dynamics

	Oceans/estuaries		Research	*	Ecosystems
	Climate	*	Monitoring/eval.	*	Flow/survival
	Other		Resource mgmt		Fish disease
		*	Planning/admin.		Supplementation
			Enforcement	*	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.
NA

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9304500	Buck Hollow Fish Habitat Restoration	Share office space, equipment, and some personel.
940200	Trout Creek Fish Habitat Restoration	Share equipment, and some personel
8805304	Hood River Production Program	Share office space only
9405400	Bull Trout study of Central & NE Oregon	Stock status and distribution

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Perform ongoing operation , maintenance, and monitoring of completed habitat treatment measures	a	Inspect and maintain riparian protection fences
		b	Inspect and maintain bank stabilization & instream structures
		c	Monitor stream temperatures
		d	photographic documentation
2	Provide habitat restoration technical assistance.	a	Provide technical assistance to private landowners and agencies involved habitat restoration work in the basin.
		b	leverage BPA funds to aquire funding from other sources for additional habitat work in the basin..

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	4/1999	3/2000	100.00%
			TOTAL 100.00%

Schedule constraints.

This project occurs on private lands, and work was authorized through the use of 15 year riparian leases with private landowners. Landowner acceptance and cooperation are necessary on private lands to allow for continued O& M of this project.

Completion date.
2013

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel	FY 1999	$92,870
Fringe benefits	Other Personel Expenses	$35,810
Supplies, materials, non-expendable property	Office rent, vehicles, mileage, fencing supplies	45,400
Operations & maintenance	The above budget is entirely an Operation & Maintenance budget..	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	$0
Travel	Training & per diem	$520
Indirect costs	22.9 % personal services & services & supplies	$41,400
Subcontracts	WCSWCD	$4,000
Other		
TOTAL		$220,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	$220,000	$220,000	$220,000	$220,000
O&M as % of total	100.00%	100.00%	100.00%	100.00%

Section 6. Abstract

The Fifteenmile Creek Habitat Improvement Project is an ongoing "on the ground" **operation & maintenance** project. With funding requested for FY 1999 the project intent is to **maintain** all habitat treatment measures installed in the Fifteenmile Basin to date. This will be accomplished by continuing to maintain the 100 plus miles riparian protection fences and the existing 900 fish habitat structures. This project will continue to address factors limiting production as long as it is given the needed funding to properly maintain it. Continue to provide technical assistance to local landowners and other agency personnel doing fish habitat restoration work in the Fifteenmile Creek Basin. We will attempt to leverage BPA funding to aquire additional funding from other granting sources to accomplish additional habitat restoration projects within the Fifteenmile Creek Basin.

We request BPA funding for this operation and maintenance project for three years. This will allow us to manage the project in a more effective manner.

The goal of the implementation phase was to provide improved fish habitat, increased habitat diversity, increased stream shading, reduced water temperatures, reduced sedimentation, provide for unobstructed fish passage, and screen all irrigation withdrawals. The goal of the project is to improve natural production of the eastern most run of wild winter steelhead in the Columbia River Basin. This is being accomplished in the Fifteenmile Creek Basin, under the Columbia River basin Fish and Wildlife program, Measures 7.6, 7.6A.1, 7.6B.1, 7.6B.2, 7.6B.3, 7.6B.4, 7.6C. This project operates under the assumption that the Fifteenmile Basin will never again be pristine because of human alterations to the ecosystem but, can still be very productive in terms of fish production. This can only happen if we continue to address the factors limiting production basin wide.

Cooperators in the habitat enhancement project include 70 private landowners, USFS, WCSWCD, NRCS, NMFS, and OWR. OWT, Confederated Tribes of Warm Springs Reservation of Oregon, USFWS, and the Fifteenmile Creek Watershed Council.

Habitat improvements made under this project include:
- 100 miles riparian fencing constructed
- 45 miles of stream protected
- 900 fish habitat structures constructed
- 6 spring developments constructed

- 6 pump screens installed
- 2 rotary drum screens installed
- 3 fish passage projects constructed

Stream temperature data and photpoint documentation are being collected throughout the basin. In addition there was a FY 1998 proposal submitted to evaluate the effects of habitat work conducted in the Fifteenmile Creek Basin. Implementation of habitat treatment measures are expected to be completed in FY 1998, The operation and maintenance phase is expected to start in FY 1999 and continue through 2013.

Section 7. Project description

a. Technical and/or scientific background.

The Fifteenmile Creek Basin is located in north central Oregon and drains an area of approximately 238,720 acres. Fifteenmile Creek enters the Columbia River downstream of The Dalles dam at river mile 192. Fifteenmile Creek is a 5th order class 1 stream. Fifteenmile Creek flows include a high early spring runoff from melting snowpack in the higher elevations combined with spring rainstorms and followed by low summer flows. Average annual precipitation within the basin ranges from 10-45 inches. About 80 percent of the precipitation occur from October to March. In the upper basin the flora is primarily dominated by fir and pine coniferous forests. The mid to lower elevations of the basin consist mainly of grasses, perennial forbes, oak and pine. Woody riparian species are dominated by alder, dogwood, willow and cottonwood (Smith et al, 1987). Timber management is the predominate multiple use activity influencing the characteristics of the Fifteenmile basin in the National Forest headwater areas. Private lands are managed almost entirely for agriculture purposes, including grain production, livestock grazing and the production of hay and fruit. Development of lands for agricultural purposes has resulted in the following: reduction or removal of riparian vegetation, increased summertime water temperatures, increased sediment loading and has decreased the ability of the watershed to store and regulate runoff. In the past increased frequency and magnitude of runoff events has caused channel shifts which have interfered with agricultural practices. This has prompted landowners with the help of Soil Conservation Service and the Army Corps of Engineers to channelize stream courses and remove instream structure. Recent expansion of agriculture has increased demand for the limited water resource. Minimum flows for mainstem Fifteenmile Creek were adopted in 1985 by the Oregon Water Resources Department (Smith et al, 1987).

The entire Fifteenmile Creek basin is located within the ceded lands of The Confederated Tribes of the Warm Spring Reservation of Oregon. Fifteenmile Creek is not a stream running through the Warm Springs Reservation to which the tribe reserved exclusive fishing rights. It is a stream that tribal members and their forefathers fished. Thus Fifteenmile Creek is a stream that tribal treaty fishing rights are attached. This project may also help keep the potential alive to restore the traditional Native American steelhead

and Pacific Lamprey fishery below Seuferet falls on lower Fifteenmile Creek. Lamprey are an integral part of tribal cultures. They are harvested for ceremonial, subsistence, and medicinal purposes. This fishery was voluntarily suspended in 1991 due to low escapement. (WY-KAN-USH-MI-WA-KISH-WIT 1996)

The objective of the Fifteenmile Creek Project is now to provide for continued **Operation & maintenance** of all completed habitat treatment measures. The goal of the implementation phase of the Fifteenmile Creek Habitat Enhancement Project was to improve wild winter steelhead production in the Fifteenmile Creek Basin, under the Columbia River Basin Fish and Wildlife program, Measures 7.6, 7.6A.1, 7.6.B, 7.6C, 7.7, and 7.7A.

The project is funded by and through the Bonneville Power Administration. Other funding sources and cooperators in the Fifteenmile Creek Basin include: the USDA Forest Service, Wasco County Soil and Water Conservation District, Confederated Tribes of Warm Springs Reservation of Oregon, U.S Fish & Wildlife Service, and 70 private landowners. Continue to provide technical assistance to local landowners and other agency personnel doing fish habitat restoration work in the Fifteenmile Creek Basin. We will attempt to leverage BPA funding to aquire additional funding from other granting sources to accomplish additional habitat restoration projects within the Fifteenmile Creek Basin.

The Fifteenmile Creek Basin supports the eastern most stock of naturally producing wild winter steelhead (Oncorhynchus mykiss) in the Columbia basin. The current steelhead population is depressed below historic levels. Steelhead production within the Fifteenmile basin is limited primarily by habitat deficiencies within the basin and secondarily by passage problems at Bonneville Dam on the mainstem Columbia.

Fifteenmile Creek Basin was selected as a mitigation site for wild winter steelhead enhancement under the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program Measure 7.6, 7.6A. A cooperative effort among Oregon Department of Fish and Wildlife (ODFW), U.S. Forest Service (USFS), Wasco County Soil and Water Conservation District (SWCD), and the Confederated Tribes of Warm Springs has been undertaken to enhance winter steelhead habitat within the Fifteenmile watershed.

The Fifteenmile Creek Basin Fish Habitat Improvement Implementation Plan was generated to guide enhancement activities (Smith et al, 1987). The goal of the implementation plan is to restore historic escapement levels of wild winter steelhead in the Fifteenmile Creek Subbasin to mitigate in part for losses of fish production caused by the Federal Columbia River Hydro-Electric System. Phases I-III of the implementation plan were completed from 1986 - 1990. Phase IV began in 1991 and is expected to be completed in 1998. Phase V **Operation and Maintaince** will begin in 1999 and is expected to continue through 2013.

Current enhancement strategies include providing riparian protection fences and very limited instream structural treatment within the Fifteenmile Creek Basin. This will improve summer and over wintering habitat for juvenile winter steelhead. Water quality is being improved through riparian protection corridor fencing. Riparian protection fences will promote re-vegetation and shade to decrease summertime high water temperatures as well as increase allocthonous input into the stream. With funding from National Marine Fisheries Service (NMFS) rotary drum fish protection screens as well as irrigation pump screens were installed at unscreened or improperly screened irrigation withdrawals. This will improve survival of rearing juveniles and outmigrating smolts. The effort and the money spent on this type of endeavor does assist in the rehabilitation of stream functions. Livestock grazing has been perhaps the most prevalent cause of ecological degradation for many western riparian and stream ecosystems (Kauffman and Krueger 1984, Kauffman 1988, Fleischner 1994). After extensive field reviews of fish habitat improvement projects in eastern Oregon Beschta et. al. (1991) and Kauffman et. al. (1993) concluded that the cessation of livestock grazing in riparian zones in easteren Oregon was the single most ecological effective approach to restoring salmonid habitats. Upland and agriculture treatment measures are currently being funded and implemented by the Wasco County Soil & Water Conservation District (SWCD) and the Natural Resource Conservation Service (NRCS).

b. Proposal objectives.

The objective of the implementation phase of Fifteenmile Habitat restoration project was to increase production of wild winter steelhead within the Fifteenmile Creek Basin using habitat protection and enhancement measures. With the 1998 completion of the BPA funded implementation phase of this project it is now necessary to turn our attention to the operation and maintenance phase of the project. The operation and maintenance of the Fifteenmile Creek Habitat Restoration Project will ensure that past BPA dollars spent will continue to function to address limiting factors and allow for watershed recovery. This is being accomplished in the Fifteenmile Creek Basin, under the Columbia River Basin Fish & Wildlife program, Measure 7.6. To accomplish this goal, work will progress in the following area:

Perform ongoing operation, maintenance, and monitoring, activities to insure continued functioning of completed fish habitat improvements, and to document the effectiveness of improvement measures. Operations and maintenance is defined by Bonneville Power Administration as follows:

"Operation" is the act of running equipment or facilities to produce a specific product or service. Operations include both the fixed and variable cost of such activities".

"Maintenance" consists of the activities and materials necessary to keep equipment, roads, fences and buildings in good working order. Maintenance involves either routine, preventative, servicing or repair and replacement of defective or wearing parts or equipment, structures, roads, fences, etc.".

Operation and maintenance begins as soon as the project is completed and must be continued until the end of the project or for 15 years. Maintenance activities include, but are not limited to, maintenance of riparian protection fences, instream structures, bank stabilization, and fish passage facilities.

1) Inspect and maintain riparian corridor fence.

All fences, including livestock water gaps, will be visually inspected at least once per month throughout the contract period. During periods of heavy livestock exposure or inclement weather, fences may be inspected more frequently. Fence condition and livestock usage and intensity will be documented. Damage from livestock, wildlife, weather, and other sources will be repaired as needed. Fence post, wire, gates, hardware, and other components will be inspected for normal wear and weathering. Components will be replaced or repaired as needed.

2) Inspect and maintain bank stabilization and instream habitat structures.

All instream fish habitat structures will be inspected annually in the spring, following high water or ice events. Damage to, or failure of structures will be documented. Repairs will be made only when structures have failed, are about to fail, or will become ineffective if not maintained. ODFW will implement such repairs through contracts with private equipment operators. ODFW will coordinate with landowners to locate access for repairs, and to develop repair schedules that do not adversely affect landowner operations. ODFW will obtain required local, State, and Federal permits for construction activities and instream operations. Priority for repair work shall be given to sites where failure of structures is causing or about to cause damage to riparian fencing.

3) Monitor stream temperatures.

Document temperature changes attributable to riparian and stream channel recovery. Thermographs will be installed and operated for the period April 1 - October 31 at ten locations: five on Fifteenmile Creek, four on Eightmile Creek and 1 on Ramsey Creek.

4) Photographic documentation.

Photographs will be taken at designated photo points to document stream channel condition and riparian recovery. Forty-one photo points have been established at project sites throughout the sub basin. Photos will be taken in August under low flow conditions.

5) Provide maps of project locations to BPA for inclusion in a GIS database.

Locations of all completed habitat improvements will be mapped using a GPS receiver.

c. Rationale and significance to Regional Programs.

"Restoration in riparian ecosystems is defined as reestablishment of predisturbance riparian function and releated chemical, biological, and physical processes (National

Research Council 1992). Restoration is the process of repairing damage caused by humans to the diversity and dynamics of indigenous ecosystems (Jackson et al. 1995). While ecological restoration attempts to return riparian zones as closely as possible to predisturbance functions and processes, scientists must recognize that ecosystems are in a constant state of flux due to ever changing environmental conditions. These changes, sometimes coupled with irreversible human impacts (e.g., soil loss, biotic invasions, air pollution), may preclude our capability to precisely re-create ecosystem structure and functions that previously existed. Thus, the goal of restoration projects is to ensure that the dynamics of natural ecosystem processes are again operating efficiently so that both ecosystems structure and function can be recovered (National Research Council 1992)." (J. Boone Kauffman et al, 1997).

Fifteenmile Creek currently supports the eastern most population of natural producing wild winter steelhead in the Columbia Basin. The current population is depressed below historic levels. Steelhead production within the Fifteenmile Basin is limited by habitat deficiencies within the basin and secondarily by passage problems at Bonneville Dam on the mainstream Columbia River. The rational of the Fifteenmile Habitat restoration project is to increase production of winter steelhead within the Fifteenmile Creek Basin by minimizing or eliminating habitat deficiencies through habitat protection and enhancement measures. It is assumed that by controlling livestock grazing in riparian areas, stabilizing streambanks where necessary, and providing additional fish habitat diversity on private lands that the dwindling population of winter steelhead will begin to rebound. *"Streams and riparian zones are valuable ecosystems in terms of biological diversity, biogeochemical processes, and productivity. For humans, riparian and stream ecosystems are the focus of commodity, recreational, and aesthetic values. The preservation and maintenance of intact riparian ecosystems and the restoration of degraded ones are important to local, regional, and future generations" (J. Boone Kauffman, et al.1997).* This is being accomplished in the Fifteenmile Creek Basin, under the Columbia River Basin Fish & Wildlife program, Measure 7.6.

d. Project history

In the period between 1987 and present, BPA funded habitat improvement work in the Fifteenmile Creek Watershed as project 86-79-01. During that time, 100 miles of riparian fence, 899 habitat structures, four spring developments, 96 fish screens, and 6 fish passage improvement projects were installed to improve winter steelhead habitat in an effort to increase natural production. In order to be able to install these improvements on private land, landowners signed 15-year leases where ODFW (with BPA funding), assumed maintenance of the improvements. This project provides for the operation and maintenance of these improvements. The implementation of this project is ongoing and we expect to continue to sign leases through 1998.

This project has benefited wild winter steelhead as well as resident trout, and pacific lamprey by providing increased habitat diversity, and increased shade and cover. To what

extent we are unsure without a more in depth monitoring and evaluation project. ODFW submitted an FY 1998 proposal to evaulate the effects of completed habitat treatment measures within the basin.Based on photopoint pictures the project has greatly increased instream habitat diversity, restored streamside vegetation and canopy, and reduced streambank erosion on 45.7 miles of stream. The project has also restored full passage by laddering and screening irrigation diversion structures and screening of irrigation pump intakes. Cattle and wheat ranchers as well as other land users have been educated on the importance of restoration of riparian areas.

Recent improvements on Fifteenmile Creek have allowed this stream to begin to recover from decades of habitat degradation due to overgrazing, ag practices, logging, and road development. Without continued maintenance of these improvements, especially to riparian fencing, the riparian recovery that has occurred in the past nine years will be lost. Whereas, if these improvements are fully maintained for the 15-year term of the landowner leases this stream should be at almost full recovery.

The Fifteenmile Creek Habitat Restoration Project preserves management options within the Fifteenmile Creek basin for steelhead and resident species by improving critical habitat. This project will also allow for continued health of Fifteenmile Creek and its tributaries.

This project may also help keep the potential alive to restore the traditional Native American steelhead and lamprey fishery below Seuferet falls on lower Fifteenmile Creek. The Native American steelhead and lamprey fisheries on Fifteenmile Creek were voluntarily suspended in 1991 due to low escapement.

We have collectively gained considerable knowledge in regards to bank stabilization projects. We currently are taking a softer approach and incorporating more bio-engineering into each project. Bank stabilization and vegetation work has reduced the chronic problem of fill and removal violations associated with landowners temporary “fixes” to stream bank erosion following high water events.

e. Methods.

Perform ongoing operation, maintenance, monitoring, and evaluation activities to insure continued functioning of completed fish habitat improvements, and to document the effectiveness of improvement measures.

All fences, including livestock water gaps, will be visually inspected at least once per month throughout the contract period. During periods of heavy livestock exposure or inclement weather, fences may be inspected more frequently. Fence condition and livestock usage and intensity will be documented. Damage from livestock, wildlife,

weather, and other sources will be repaired as needed. Fence post, wire, gates, hardware, and other components will be inspected for normal wear and weathering. Components will be replaced or repaired as needed. All instream fish habitat structures will be inspected annually in the spring, following high water or ice events. Damage to, or failure of structures will be documented. Repairs will be made only when structures have failed, are about to fail, or will become ineffective if not maintained. ODFW will implement such repairs through contracts with private equipment operators. ODFW will coordinate with landowners to locate access for repairs, and to develop repair schedules that do not adversely affect landowner operations. ODFW will obtain required local, State, and Federal permits for construction activities and instream operations. Priority for repair work sill be given to sites where failure of structures is causing or about to cause damage to riparian fencing. ODFW will document temperature changes attributable to riparian and stream channel recovery. Thermographs will be installed and operated for the period April 1 - October 31 at ten locations: five on Fifteenmile Creek, four on Eightmile Creek and 1 on Ramsey Creek. Photographs will be taken at designated photo points to document stream channel condition and riparian recovery. Forty one photo points have been established at project sites throughout the sub basin. Photos will be taken in August under low flow conditions. In addition it is hoped that BPA will fund the FY 1998 proposal to monitor smolt as well as adult production of steelhead within the Fifteenmile Basin. We believe that the information gained from this monitoring project will be invaluable to this project. We also believe that it will serve to answer further question regarding the effectiveness of fish habitat restoration work conducted throughout the region.

f. Facilities and equipment.

The Fifteenmile Creek Project currently has the necessary personnel, office space, computers, vehicles, equipment, and tools to continue with the operation and maintenance and monitoring of this project. We do not foresee the need for any major purchases in the future. Following is a list of equipment and facilities that the Fifteenmile Creek Project currently has or has access to.

Facilities:

- Office Space 1860 ft^2
- Shop Space 1860 ft^2
- Off Site Storage 7,000 ft^2
- 1 20x20 container 400 ft^2

Of the above space BPA pays 1/3. Federal Mitchell Act and the Hood River Project pays the remainder.

Equipment:

• 3 4X4 Vehicles(leased)	4X4 John Deere Tractor	Camera
• 2 Computers	2 ATV's	Flow Meter
• 1 Printer	10 Thermographs	Wood Post Driver
• Chain Saw	Typewriter	Power Auger

Other Equipment Available:

This equipment is available for use to the Fifteenmile Creek Project but, belongs to Federal Mitchell Act program.

• Cat 4X4 Backhoe	Welders	Lathe	Milling Machine
• Steam Cleaner	Pipe Bender	Table Saw	Drill Press
• Grinders	Power Hack Saw	Ironworker	
• 2 20X8 containers	Dump Truck	20' trailer	

g. References.

Oregon Department of Fish & Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon. September 1, 1990. Columbia Basin System Planning Salmon & Steelhead Production Plan. Funds provided by the Northwest Power Planning Council, and Agency's and Indian Tribes of the Columbia Basin Fish and Wildlife Authority.

Roger Smith, Dave Heller, Jim Newton, Harv Forsgren, Ron Boyce Ken MacDonald. September 1987. Fifteenmile Basin Fish Improvement Implementation Plan. Funded by Bonneville Power Administration project #86-79-01,1986.

CRITFC. 1996. WY-KAN-USH-MI-WA-KISH-WIT. The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and the Yakama Tribes. Portland, OR. Cited: volume II, pages 34 and 35.

J. Boone Kauffman, Robert Beschta, Nick Otting, and Danna Lytgen. May 1997. An Ecological Perspective of Riparian and Stream Restoration in the Western United States.

National Research Council. (U.S.) Committee on restoration of aquatic ecosystems-science, technology and public policy. 1992 Restoration of aquatic ecosystems. National Academy Press, Washington , DC. (As reported in Kauffman et al. 1997).

Jackson, L. L., N. Lopoukhine, and D. Hillyard. 1995. Ecological Restoration: a definition and comments. Restor. Ecol. 3:71-75. (As reported in Kauffman et al. 1997).

Kauffman J.B., and W.C. Krueger. 1984. Livestock impacts on riparian ecosystems and stream management implications: a review. J. Range Manage. 37:430-437.

Section 8. Relationships to other projects

The Fifteenmile Creek Habitat Restoration Project shares office space, computers, equipment, tools, vehicles, and some personnel with the Buckhollow, Trout Creek, Hood River and the fish screening projects located in The Dalles and Madras Oregon. The Fifteenmile Creek Habitat Restoration Project functions very similar to other fish restoration projects throughout the State (i.e. John Day, upper and lower Grande Ronde, Umitilla).

The Fifteenmile Creek Habitat Restoration Project works very closely with a multitude of other agencies and groups. Each agency or group listed below has a large stake in seeing that this project is a success because they have provided either money, technical assistance or both.

- 71 private landowners
- Wasco County Soil & Water Conservation District. (SWCD)
- Natural Resource Conservation Service (NRCS)
- USDA Forest Service
- Confederated Tribes of the Warm Springs Reservation of Oregon
- U.S Fish and Wildlife Service
- National Marine Fisheries
- Oregon Water Resources
- Oregon Water Trust

Section 9. Key personnel

Allen R. Dale, ODFW Program Manager, FTE 0.08

Education

1986 Colorado State University, Fort Collins, CO.
Degree: MS in Wildlife Biology

1977 Colorado State University, Fort Collins, CO.
Degree: BS in Wildlife Biology

Training

AFS Habitat Workshop, Bellevue, WA. 1991
State of Oregon DAS Core Curriculum for Managers and Supervisors.
USFS GAWS Aquatic Habitat Inventory.

Experience

1993 – Present, Oregon Department of Fish and Wildlife Assistant Regional Supervisor (Fisheries).

Duties

Administer the fisheries resources of the High Desert Region of ODFW. Programs include research, habitat, Fisheries, and Propagation. Administer Programs involving ~60 FTE's and ~$3.5 million dollar budget.

1983-1990 Denver Water Department, Environmental Planner.

Duties

Responsible for planning and implementation of habitat restoration projects for mitigation for mitigation of impacts related to dam construction. Also oversaw inventory programs conducted jointly with Colorado Division of Wildlife to measure fish population abundance in impacted reaches of rivers affected by Denver Water District's operations.

Publications

Dale, A. R. and J. A. Bailey. 1982. Application of optimal foraging theory for bighorn sheep habitat analysis. Proc. 3rd Bienn. Symp. North Wild Sheep and Goat Counc. Pp 254-264.

Chilcote, M., K. Kostow, H. Weeks, H. Schaller, and A. Dale. 1991. First Biennial Report on Status of Oregon's Wild Fish Populations. ODFW.

Ray Hartlerode, Project Leader, 0.33 FTE

Education

1979 – 1983 Oregon State University; Corvallis, Oregon
Degree: B.S. in Fisheries Science

Training

AFS Riparian Restoration Workshop
NMFS Fish Passage and Diversion Structures Training
State of Oregon DAS Core Curriculum Training for Managers and Supervisors
Northwest Fish Screening and Passage Workshops

Experience

1991-Present, Oregon Department of Fish & Wildlife; Project Leader on Fifteenmile, Trout, and Buckhollow Creek Habitat Restoration Projects. Project Leader on N.E. Oregon Screens Trout Creek Passage Project, Project Leader for NMFS Mitchell Act Fifteenmile/Trout Creek Fish Screens Project.
Duties
Fiscal management of project budgets, supervision of project personnel to implement and maintain fish habitat projects, preparation of proposals, works statements, contracts, leases, and reports, coordination of habitat projects with other agencies and organizations performing conservation programs in the watershed, Identifies stream reaches with altered habitat conditions that lack necessary habitat types to sustain natural production of fish populations, determines appropriate fish habitat restoration/improvement actions, negotiates with government and private landowners for cooperation and permission to conduct habitat restoration projects, develops program direction in the form of standards and guides for all regional habitat programs; including, but not limited to, Bonneville Power Administration (BPA) National Marine Fisheries Service (NMFS) and state funded fish habitat and screening projects.

1987-1991 – Oregon Department of Fish & Wildlife. Assistant Project Leader, Trout Creek Habitat Restoration Project

Duties
Conducted fish habitat surveys, recommended habitat restoration treatments, developed habitat restoration construction contracts, inspected construction contracts, negotiated landowner riparian leases, wrote landowner riparian leases., performed maintenance on riparian improvements such as riparian fencing and instream habitat structures.

Steven L. Springston Assistant Project
Education
HS diploma 1976
15 credit hours of post secondary education

Additional professional training, workshops and classes: contract preparation & administration, public works contracting (BOLI), bureau of labor & industries wage and hour certification, public purchasing (DAS), Haz-Mat training (ODFW), law enforcement (OSP) hazardous chemical (DEQ), aquatic inventory's (ODFW), stream habitat workshop (AFS), habitat requirements of fish (AFS), recognizing fish habitat deficiencies (AFS), fish screening (CBFWA), bio-engineering techniques (ODFW), writing classes (MCCC), computer classes (MCCC).

Experience
02/95-Present
Oregon department of Fish & Wildlife
Assistant Project Leader 1.00 FTE

Assistant Project Leader on the Fifteenmile Creek Habitat Restoration Project (Project #86-79-01). Primary responsibilities include but are not limited to: development riparian lease agreements, write construction specifications and contracts, administer construction contracts, develop cooperative agreements with private landowners and other agencies, assist Project Leader and other agency's with grant applications, write annual, monthly, and special reports (as needed), purchase all field supplies, conduct field tours and make presentations for schools and agency's, monitor leased riparian habitat, collect and summarize stream temperature data, flow data, spawning ground data, provide task guidance for habitat technicians, direct volunteer work crews performing project maintenance.

02/88 to 02/95
Oregon Department of Fish & Wildlife
Fish Habitat Tech II 1.00 FTE

Fish Habitat Technician II
Fifteenmile Creek Habitat Restoration Project:

Duties
Project maintenance, fence line staking, establishment of photopoint locations, taking of photopoint pictures, staking of habitat structure locations, monitor construction contracts, taking of flow measurements, macro-invertebrate sampling, assist with spawning ground surveys, assist with stream surveys, assist with transect measurements, perform maintenance on juvenile fish trap, operate juvenile fish trap, provide assistance to project leader as needed.

Section 10. Information/technology transfer

Information will be transferred through reports, memos, presentations, and newspaper articles about the Fifteenmile Creek Habitat Restoration Project. Information will also be transferred through the Wasco County Soil and Water Conservation District, WCSWCD monthly newsletters, and meetings. WCSWCD is a sub contractor to ODFW on the Fifteenmile Creek Habitat Restoration Project and assisted ODFW with the making of a video about the Fifteenmile Creek Habitat Restoration Project. This video is a great tool in that it shows landowners the benefits of a healthily riparian area and what the project is about. WCSWCD conducted a streambank stabilization bioengineering workshop for landowners, contractors and other agencies in the near future. This workshop demonstrated to landowners, contractors, and agencies personnel bioengineering techniques used to stabilize eroding streambanks without the use of blanket rock riprap.